Saving of up to 10% can
be achieved on an annual
basis when using Philips
LCD monitors together
with Philips SmartManage
asset management tool.

White Paper

When LCD Monitors can reduce Total Cost of Ownership

For further information about Philips professional monitors
please contact us via **www.professional.philips.com**

October 2005 - Authors: E.L. van 't Hoff & P.T.H.C. van Laer

PHILIPS

Content

PHILIPS

1. Introduction

Controlling total cost of ownership (TCO) has been the goal of every good IT manager for the last 10 years. IT managers are well aware that the costs incurred after the initial deployment of a PC network can add up to 80 per cent of total IT costs. But when they are controlling TCO, most decision-makers still focus primarily on their PCs, software and IT infrastructure. Little attention is given to the life-cycle costs of LCD monitors - despite the significant role that these play in both user satisfaction and productivity.

Philips has adopted an overall strategy focused on optimizing the life-cycle costs of LCD monitors. Rather than concentrating solely on reducing the initial purchase costs, Philips is the first supplier to address the specific needs of each life-cycle phase. The result is a range of outstanding LCD monitors, together with an asset management tool that helps companies to substantially reduce their TCO costs. This white paper aims to provide an overview of the life-cycle costs of LCD monitors and of all the individual factors that can influence those costs, and how these cost-relevant factors can best be addressed. Identifying and understanding the components of life-cycle costs is the first step towards controlling and reducing them.

2. Monitors: vital part of the desktop configuration

End-users operate their PC software by using a keyboard and a mouse, but more importantly by looking at their monitors. The monitor is what they see in front of them, day in day out as shown in Figure 1, while the PC is often stored under the desk or in a docking station, in case of a laptop. A monitor without enough brightness, contrast or color depth will cause eyestrain and reduce productivity. A monitor with faulty pixels will cause irritation, generate help desk calls and eventually result in a warranty claim, meaning e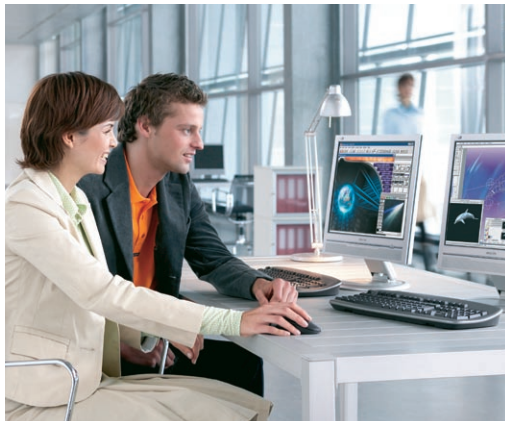xtra IT support costs and temporary downtime for the end-user. In other words, as far as end-users are concerned the monitor is what provides their 'window' on their application and on the content of their work, which makes it a strategically important tool for them.

Figure 1: The monitor is the vital visual interface with the end-user, and the dominant component at the workplace

However, for IT departments monitors are often not given the importance they deserve. Key purchase criteria are mostly based on size, design, price, display performance, warranty conditions and specific features such as I/O capabilities and on-screen display facilities. Features affecting life-cycle costs are often overlooked. Companies may have a good idea of where their PCs and other IT devices are located at any time, but can rarely answer this and many other vital cost-determining questions about their computer monitors:

•   How many monitors are being used in the organization?
•   What are their brands and configurations?
•   Where are they located?
•   Which monitors are being leased and which are owned?
•   What is the impact of all installed monitors on the total power bill?
•   What measures are in place to prevent hardware theft?
•   What are the operating hours per monitor, and what are the replacement criteria?
•   What is the warranty expiry date?

PHILIPS

Some additional facts and figures about monitors underline their importance in the overall costs picture. For example:

- The purchase cost of an LCD monitor is often more than 50% of that of a standard PC (see Figure 2)
- 35% of the power bill of a typical desktop configuration is accounted for by the monitor. The PC itself only consumes twice as much (see Figure 3)
- The theft risk of an LCD monitor is at least 3 times that of a PC. Like laptops, LCD monitors can easily be removed and are also in great demand. The theft rate of LCD monitors is estimated at 1% per year
- The technical lifetime of a monitor can easily be extended to more than 5 years, while a PC is very often written-off after 3 years
- PCs are identified with asset tags and managed by a central system. Monitors are often considered as 'consumable' accessories

One more possibly surprising example: when employees leave or move to other departments, their PCs are always returned to IT for a 'sanity check' and to reload standard settings. But the monitor just stays on the desk, awaiting its new user. Important settings like brightness and contrast – which are strongly related to users' individual preferences – are left unchanged, even though the new user will require his or her own settings.

LCD Monitor
33%

PC unit
67%

Figure 2: Price breakdown of typical PC set-up
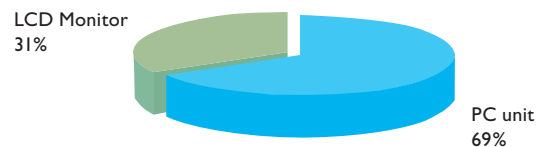
LCD Monitor
31%

PC unit
69%

Figure 3: Power consumption breakdown of a typical PC set-up

3. Defining Total Cost of Ownership

Total Cost of Ownership (TCO) is a business model to help organizations determine the total cost of procuring, owning, using and disposing of assets over time. TCO attempts to capture all the costs of IT-related investments throughout their life cycle. Four life-cycle phases are distinguished (see Figure 4):

Acquisition   Deployment   Operation   Retirement

Figure 4: The 4 phases of Total Cost of Ownership

- **Acquisition:** needs assessment, end-user surveys, vendor evaluation, planning and procurement
- **Deployment:** site preparation, de-installation of existing equipment, installation and configuration of new solution, on-site testing, user training and validation
- **Operation:** day-to-day usage, end-user support, moves & changes, hardware and software maintenance, warranty handling, asset management, power supply etc
- **Retirement:** removal and disposal of equipment at the end of its useful life

PHILIPS

Each of these phases has different cost implications, and their relative importance varies from equipment to equipment. For example, the costs of evaluating and selecting new technology such as wireless LAN are typically higher than those related to desktop PCs.

Also, note that TCO measures costs, and not the return on investment or value derived from the investment. For example, TCO will determine the cost of owning an LCD monitor - but not the added value and direct user benefits of a new 19'' monitor with 'Perfect Panel' specifications and outstanding display performance.

4. The TCO of an LCD monitor

Companies consider the purchase of new LCD monitors to replace old CRT models or to upgrade their installed base with state-of-the art technology. The reason for doing this is often driven by the need to standardize on a higher screen size or to help end-users work more productively. Reducing TCO is often not considered. This section explains why companies should put TCO high on their list of purchasing criteria for LCD monitors. For each life-cycle phase, a number of recommendations are given for minimizing TCO. These recommendations are by no means exhaustive, the focus is on TCO-related issues. Figure 5 shows the specific cost-relevant activities involved in each life-cycle phase.
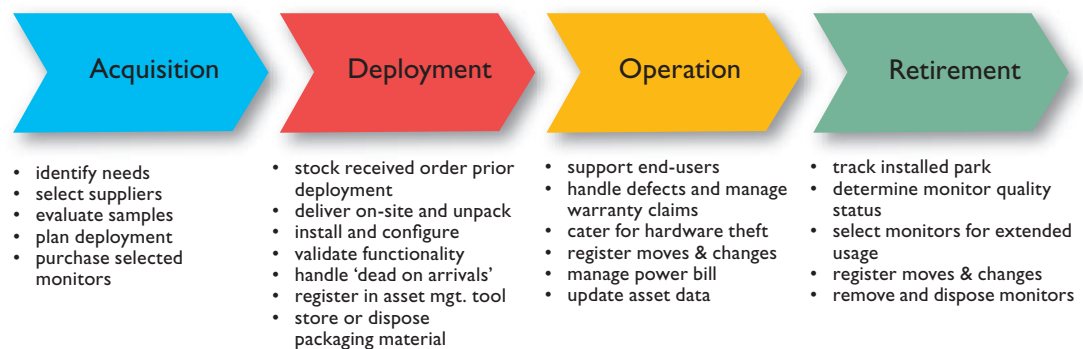
Acquisition	Deployment	Operation	Retirement
• identify needs • select suppliers • evaluate samples • plan deployment • purchase selected monitors	• stock received order prior deployment • deliver on-site and unpack • install and configure • validate functionality • handle 'dead on arrivals' • register in asset mgt. tool • store or dispose packaging material	• support end-users • handle defects and manage warranty claims • cater for hardware theft • register moves & changes • manage power bill • update asset data	• track installed park • determine monitor quality status • select monitors for extended usage • register moves & changes • remove and dispose monitors

Figure 5: Typical activities during the life-time of a LCD monitor

4.1 Acquisition phase

The identification, comparison, selection and purchase of new LCD monitors that best meet all a company's needs right through the life cycle can be a time-consuming task. Valuable time and effort can be saved by choosing a display vendor with the right processes in place to simplify all the steps during the acquisition phase.

• Product information should be easy to find and complete, preferably on-line. This applies not only to spec. sheets, but also to approval certificates, user guides, technical drawings, warranty statements and compatibility overviews

• The vendor should actively support the evaluation process with, for example, test samples, testimonials, benchmark data, review reports and white papers

• Product pricing should be unambiguous and where necessary transparent

Information about the vendor should be provided on request, supported by financial data, organization structure, long-term strategy, global presence and related pricing, warranty and supply conditions, sustainability policy etc.

• The product should be available through the customer's preferred reseller or system integrator. Simple, effective procedures should be in place to allow such third-party companies to check availability and place orders

PHILIPS

4.2 Deployment phase

Companies typically order their new monitors in batches, stock them at a central point and deploy them on a department-by-department basis. Then the installation engineers go to work, often during the weekend. They move from office to office to unpack, install, test, register and validate all the individual monitors. A number of criteria are important to facilitate this process:

- Order to delivery time: LCD monitor deliveries may be affected by component shortages, and vendors should be able to give reliable delivery commitments in line with the deployment schedule
- Packaging: unpacking should be quick and easy. Compact box size saves space when monitors are held in stock before deployment. It also means more units can be loaded on a trolley, and there is less packaging material to dispose of. Or if the company prefers to keep packaging for possible future moves, less storage space is required
- Rapid replacement should be guaranteed for any units that are 'dead on arrival'
- Documentation must be clear and complete, including a simple 'quick start up' guide
  The power supply should be built-in (no external adapters). The product can then be plugged directly into a mains power outlet, saving installation time
- Cable management should be neat and easy, with provisions to manage the routing of cables for power, PC VGA/DVI connection, mouse and keyboard
- Plug & play options: comprehensive OSD (On Screen Display) features are recommended, including reset to factory settings, auto-adjust and self-diagnosis to allow quick, secure installation
- Usability should be intuitive with no training required. The 'quick start up' procedure should be sufficient
- Asset registration software should be provided, allowing monitor details to be registered in a central repository rather than on paper. An integrated asset management solution will simplify both the registration process and later access to asset data

4.3 Operation phase

The operation phase is obviously the most costly in terms of TCO. End-users are using their monitors day-in day-out, and expect first-rate quality and full-time operation. In particular, monitor downtime must be reduced to an absolute minimum as this can outweigh all other costs in case of high failure rates and long repair cycles.

The operation phase can also involve business changes, employee turnover, closure and relocation of departments, renewal of lease contracts, theft of equipment etc. The better a monitor is prepared to handle these frequent events, the lower the costs will be over time.

Warranty and service:
- A minimum of 3 years warranty is highly recommended. This minimizes depreciation costs and maximizes business continuity
- 'Double swap' should be made available next to standard single on-site swap. This extra service reduces the hidden costs of users complaining of not getting their original monitors back. It also saves administration costs because there is no need to enter new monitors into the asset management system - the original monitor is returned quickly after service
- On-site swap minimizes the cost of downtime and reduces the costs of on-site spares. Note that most companies normally keep on-site spares stocks to allow fast response to hardware failures
- Helpdesk facilities should be available to users in their own local language

Quality:
- Pixel policy: a 'Perfect Panel' guarantee is recommended to eliminate possible user dissatisfaction and hidden costs of end-users complaining about faulty pixels

PHILIPS

Power consumption:

- The monitor represents up to 35% of the total power costs of desktop equipment, so monitor power consumption should be as low as possible

- A centralized power shutdown mode is recommended. PC power management places the monitor in standby mode, further power savings (typically 3 to 8 watts) can be achieved by shutting down monitors individually or collectively from a central location - especially useful during weekends, holiday periods and employee illness

Security (to prevent hardware theft):

- A built-in Kensington lock should be a standard feature, enabling companies to prevent the theft of LCD monitors

- An alarm feature to alert central IT or corporate security in case a monitor is disconnected is highly recommended. This is an excellent alternative for companies that do not want to use (space-occupying) Kensington cables, and is also an effective way to 'catch the thief' before he or she leaves the building

- The ability to lock a monitor as soon it is disconnected from the PC will further reduce hardware theft. In-house theft is often done repeatedly by a single individual. Someone who steals a monitors and finds that it does not work at home will not steal another one. A prominent sticker stating the presence of anti-theft measures will help to reduce theft further

Asset management:

- Monitoring of operating hours: this is recommended on a centralized basis, preferably automatically by means of a software asset management system. This will eliminate time-consuming manual logging and possible unreliability or inconsistency of data entered by end-users

- Remote configuration: centralized control is recommended to facilitate restoration of default or preferred settings without the need for constant local intervention by support personnel

4.4 Retirement phase

Organizations are increasingly faced with the hard costs of disposing of IT equipment at end-of-life. This also applies to LCD monitors, even though these costs are now only a quarter of those for monitors based on conventional CRT technology.

During this end-of-life phase, time is often lost in tracking the physical location of all deployed monitors. Moreover, companies often decide to retain a couple of monitors for special purposes, and may face difficulties in selecting those that are best suited for this 'post-life' use. These potential difficulties should be addressed by a number of measures to reduce the administrative workload on end-of-life disposal, for example including:

- Asset tracking: through asset management software that allows easy tracking of monitors and identification of their locations

- Operating hours registration: allows determination of which monitors should be disposed of and replaced first, and which can be retained for 'post-life' use

- Weight restriction: low-weight monitors provide small savings on disposal costs but big environmental benefits

- RoHS compliance: like all the other parts of the desktop configuration, LCD monitors should comply with the European directive on Restriction of Hazardous Substances (RoHS) which takes effect from 1 July 2006. This limits the permissible concentrations of lead and other toxic substances. Customers should assure themselves that the products they purchase are RoHS-compliant in relation to their own substainability programs, as well as possible environmental certification requirements.

PHILIPS

5. Philips solution for reducing TCO costs

Philips monitors have always offered outstanding display and ergonomic performance. The resulting high levels of user comfort and convenience translate into optimum employee productivity and satisfaction. However today's business environment also demands stringent cost control, and as already explained this means much more than simply looking for the lowest possible initial cost. Section 5.1 below describes specific ways in which Philips' processes and LCD monitor products are focused on helping user organizations to reduce their TCO. Section 5.2 then describes how further savings and efficiency gains can be made by using the Philips SmartManage asset management tool.

5.1 Reducing TCO with Philips LCD monitors

The main ways in which Philips enables users to reduce TCO with its business processes and LCD monitors during the individual life-cycle phases are outlined below:

Reducing TCO during the Acquisition phase

Controlling TCO during the acquisition phase is related more to vendor processes and effectiveness in dealing with the customer, which for Philips means actively facilitating and supporting the customer's evaluation, selection and procurement processes. This extends from convenient availability of the required information, data and documentation, right up to effective distribution through the channels favored by the customer. Also included is attractive and competitive pricing, communicated on a transparent basis. Finally, customers will want to assure themselves that the vendor with whom they choose to do business has a long-term commitment to product development and customer support, plus the sound financial base to last the distance in today's fast-changing business environment, and these are areas in which Philips has proven credentials.

Figure 6: TCO saving features of Philips LCD monitors

Reducing TCO during the Deployment phase

Deployment is more than simply placing new products on end-users' desktops, and Philips recognizes the importance of its contribution to a smooth Deployment phase. It starts with quick, reliable delivery in line with the customer's deployment schedule. On-site, Philips devoted considerable attention to packaging that meets customer demands: compact for easy transport, designed for quick unpacking and product access, re-usable if necessary, and produced with environmental awareness to generate minimal waste streams consisting of recyclable materials only. As far as the product itself is concerned, Philips monitors are 'plug & play' enabling direct PC connection and operation without complex installation procedures. The built-in power supplies allow immediate connection to mains outlets without the need for external adapters. The result is fast, efficient implementation by IT support staff, even for larger numbers of monitors, and minimal disruption to end-users at their workplaces.

Reducing TCO during the Operation phase

Low power consumption, high reliability and excellent customer support are the pillars of the Philips approach to minimizing TCO during the Operation phase. Where power consumption is concerned, Philips monitors meet the industry's most stringent standards in both operating and standby modes. Reliability is expressed on the one hand by high MTBF (Mean Time Between

PHILIPS

Failures), applying to the entire product. Specifically for the display panel, consistent, fault-free performance over the product lifetime is assured by Philips' worldwide 'Perfect Panel' policy (based on ISO 13406-2 Class 1 standard).

'Perfect Panel' is a guarantee that LCD panels will be completely free of pixel defects, eliminating the problem of bright or dark dot defects on the display throughout the warranty period.
If a display panel has even a single bright or dark dot defect, Philips will replace it free of charge through its industry-leading service network. This is the industry's first defect-free LCD display policy, and by itself will eliminate many of the helpdesk calls by end-users. Also important is the fact that Philips monitors have a 3-year warranty as standard, with a 48-hour swap service (available in selected countries) so customers do not need to hold local spare stocks to deal with occasional hardware defects.

Reducing TCO during Retirement phase

TCO implications of product disposal are often neglected during acquisition, but are playing an increasingly significant role in life-cycle costs. Like all Philips products, monitors are designed with all applicable sustainability issues in mind. Philips has introduced the EcoVision environmental action program to address all environmentally relevant issues. This includes EcoDesign environmentally conscious product design, which is measured in terms of five key Green Focal Areas: energy consumption, product weight, use of environmentally relevant substances, packaging and recycling & disposal. This means Philips' product designers analyze every stage of the product life cycle and integrate environmental considerations in their design goals.

Particularly important at end-of-life are aspects like product weight and RoHS compliance, both of which have a direct impact on disposal costs, and these are inherently addressed by the Philips EcoDesign principles.

5.2 Making further TCO savings with Philips SmartManage

Network management tools from different suppliers have been designed to allow management from a single, central point of all key devices such as PCs, laptops, servers, databases, routers and firewalls. However up to now none has included end-users' LCD monitors. To meet this need, Philips has joined forces with Altiris, a leading vendor of systems management software, to create SmartManage – an IT asset management tool that saves time, effort and cost at every stage of the product life cycle.

SmartManage is included as standard in the Philips LCD monitors, and provides a valuable business productivity solution for enterprise IT managers in performing remote LCD display monitoring, management, security and end-user support over their networks. SmartManage starts by enabling IT staff to manage their monitor assets, and can be expanded to implement all network management tasks, from PCs to servers and other hardware. See also figure 7.

Formerly, IT staff had to walk from department to department to manually compile monitor audit reports, adjust or restore settings, verify the physical presence of display devices, communicate with end-users and provide technical support. By allowing IT staff to conduct security checks, compile asset data, implement standard settings, transmit instant messages and deal routinely and efficiently with technical issues over the corporate LAN, SmartManage saves enterprises manpower and money, thereby making a significant contribution to reducing the Total Cost of Ownership of LCD monitors.
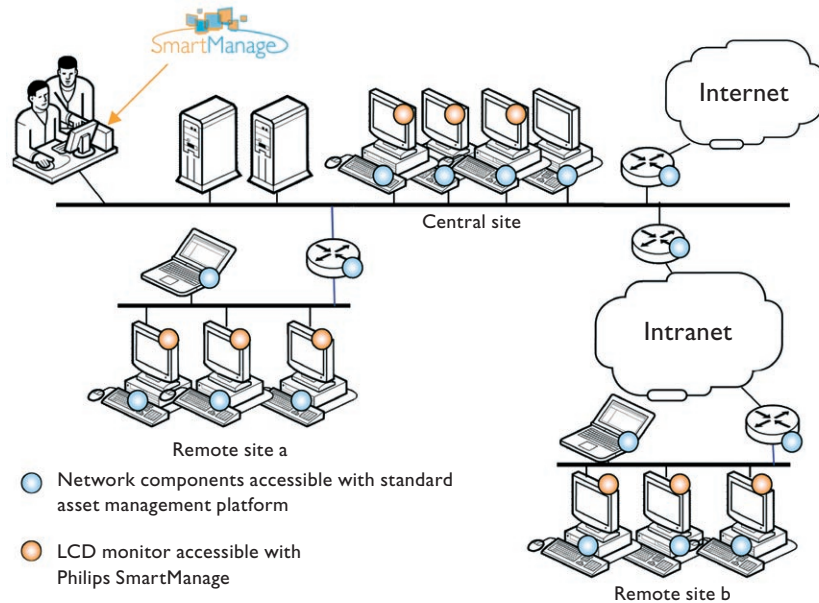
PHILIPS

Figure 7: Typical IT infrastructure, including multiple LCD monitors

Includes anti-theft measures

The popularity and compact size of Philips LCD monitors also make them a ready target for thieves. SmartManage will indicate if displays are moved from their assigned locations by providing a warning message to a designated manager or e-mail account. If a monitor is stolen, the enabled security function can also prevent its use at another site.

Maximizing power saving

With constantly rising energy costs, organizations need to maximize the power-saving capabilities of their assets. Philips LCD monitors already deliver energy savings of 20 per cent higher than the industry average. However, large numbers of unattended LCD monitors, even in standby mode, will have a significant energy consumption after working hours. On the other hand, switching those unattended LCD monitors on and off manually is time-consuming and uneconomic. SmartManage provides an efficient tool that enables corporate IT staff to meet this universal power management need from a single, central location.

Adjustment without using physical monitor controls

The performance and settings of individual monitors can be adjusted using the SmartManage client without touching the physical monitor controls. In addition, IT staff can remotely return all LCD monitors - especially when unattended - to factory default settings, without the need to spend significant time and manpower for on-site adjustment 'rounds'.

Addresses essential corporate IT management needs

SmartManage allows IT staff to manage their monitor assets remotely and efficiently. Its wide range of functions, including power on/off, display settings, asset reports, monitor security and instant communication with users, address some of the essential needs of the modern corporate IT management environment. In this way SmartManage significantly reduces the administrative and asset management workload and by doing so makes a major contribution to reducing Total Cost of Ownership.

How SmartManage works

SmartManage uses a new, bidirectional communication protocol, the Display Data Communications Command Interface (DDC/CI) standard, to allow Philips LCD monitors to communicate with the Altiris agent on the client computer and the asset management system. A typical SmartManage configuration is shown in Figure 8.
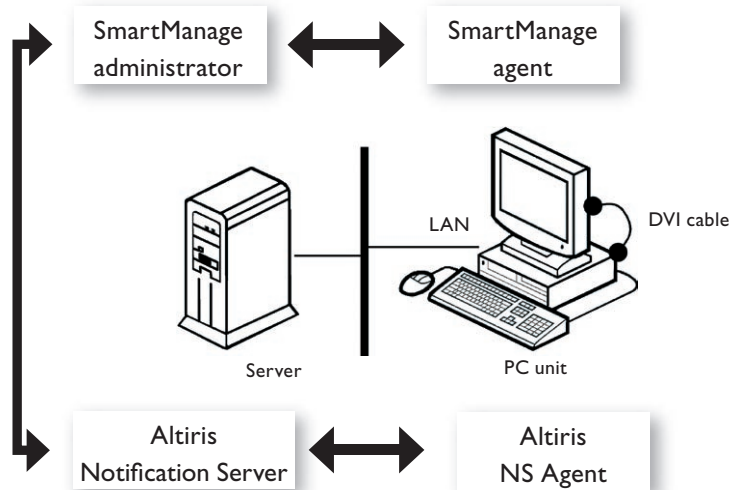
PHILIPS

Figure 8: SmartManage configuration set-up

Centralized management and control

In addition, information about every SmartManage-compatible display – including serial and model numbers, operating hours, settings status and cost-relevant – is transmitted automatically between displays and the asset management system. This provides the ability to reduce audit and maintenance cycle times, ease administrative burdens, secure all the Philips displays in the end-user environment and reduce Total Cost of Ownership.
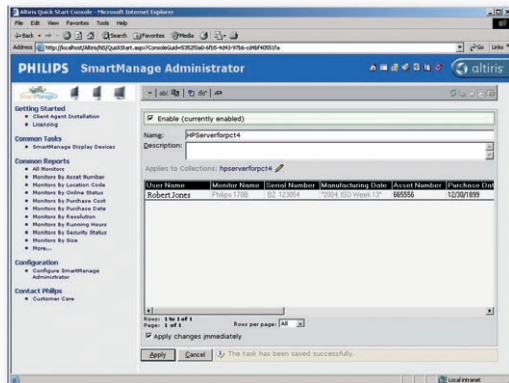

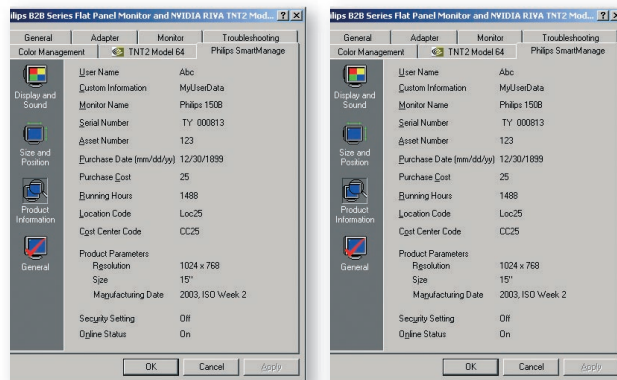Figure 9: Example of SmartManage administration interface

Figure 10: Two examples of the SmartManage end-user interface

Figure 9 shows an example of a SmartManage administrator interface screen, and Figure 10 shows two typical end-user menu screens.

PHILIPS

6. Calculating TCO costs of LCD monitors

A computation of the direct and indirect costs, compiled on an annual basis over a period of three to five years, provides a total cost of ownership figure. The results can be quite telling. This section compares the costs of owning 500 Philips 17'' LCD monitors (model 170B) with those of 500 industry-average displays with the same size and comparable display performance specifications.

6.1 Specifications overview

The table shown below provides an overview of the key specifications that affect the total cost of ownership. It is assumed that both monitor types are within the same price range and that the other-brand vendor, like Philips, is a well known company with a sound financial position and a long-term strategy within the LCD displays market.

	Philips 170B	Industry average
Panel size and resolution	17'' 1280x1024	17'' 1280x1024
Acquisition phase		
Monitor price (ex. VAT)	EUR 250	EUR 250
Asset management user licence (ex. VAT)	EUR 4	n.a.
Deployment phase		
Built-in power supply	Yes	50% no
Cable management	Yes	50% no
Auto self-adjust and diagnosis	Yes	Yes
Remote asset tagging	SmartManage	No
Remote monitor configuration	SmartManage	No
Operation phase		
Standard warranty duration	3 years	2,5 years
48-hour on-site single swap	Yes	Yes
Pixel policy	Perfect panel (zero dead pixels)	Class 2 (up to 3 dead pixels)
MTBF	50,000 hours	50,000 hours
Power consumption	32 W	45 W
Standby power consumption	3 W	5 W
Remote power management	SmartManage	No
Built-in Kensington lock	Yes	50% no
Central alarm after cable pull-out	SmartManage	No
Monitor lock after cable pull-out	SmartManage	No
Remote life-cycle management	SmartManage	No
Retirement phase		
Remote asset tracking	SmartManage	No
Remote operating hours registration	SmartManage	No
Monitor weight	4.8kg	6.0kg
RoHS compliance	Yes	50% not yet

Table 1: Key specifications of Philips 17'' monitors compared with industry average

PHILIPS

6.2 TCO breakdown

This section provide a TCO calculation for both monitor types over a lifetime of 5 years. A cost breakdown is presented in the table below. This is a simplified calculation limited to measurable figures.

	Philips Monitor	Industry average
Acquisition phase		
Vendor selection costs	€ 2,176.00	€ 2,560.00
Purchase costs	€ 151,130.00	€ 148,750.00
Total	**€ 153,306.00**	**€ 151,310.00**
Deployment phase		
Monitor deployment costs	€ 15,000.00	€ 20,000.00
Asset management deployment costs	€ 1,280.00	€ 0.00
Total	**€ 16,280.00**	**€ 20,000.00**
Operation phase		
Annual IT management & helpdesk costs	€ 11,250.00	€ 12,500.00
Annual service costs due to warranty expiration	€ 2,975.00	€ 3,125.00
Annual up-time power consumption	€ 1,040.00	€ 1,625.00
Annual idle-time power consumption	€ 151.32	€ 1,765.40
Annual down-time costs	€ 1,875.00	€ 2,625.00
Annual monitor purchase costs due to theft	€ 297.50	€ 1,487.50
Total (over depreciation time)	**€ 87,944.10**	**€ 115,639.50**
Retirement phase		
End-of-Life IT costs related to asset tracking	€ 1,200.00	€ 6,000.00
End-of-Life saving on depreciations costs	-€ 2,083.33	€ 0.00
Removal costs	€ 4,500.00	€ 6,000.00
Disposal costs	€ 1,200.00	€ 1,625.00
Total	**€ 4,816.67**	**€ 13,625.00**
Total Cost of Ownership		
Annual TCO	**€ 262,346.77**	**€ 300,574.50**
Calculated saving		
TCO saving achieved with Philips	**€ 38,227.73**	**12.7%**

Table 2: Monitor TCO cost breakdown of Philips versus industry average

The above calculations are based on a number of assumptions that have been verified with various IT managers. Some of the assumptions have been derived from Gartner reports about the TCO costs of desktop PCs. The most important of these are listed below.

General:
- Energy costs per kW/hour: EUR 0.065
- Disposal costs per kg: EUR 0.50
- LCD monitor theft rate: 1%
- Man-hour costs of senior engineer: EUR 80 (e.g. network manager, purchasing manager etc.)
- Man-hour costs of junior engineer: EUR 60 (e.g. installation engineer, helpdesk agent etc.)

Related to Gartner:
- Annual operating costs of well managed PC: EUR 450
- Annual downtime costs of well managed PC: EUR 500
- Annual operating costs of unmanaged PC: EUR 75
- Annual downtime costs of unmanaged PC: EUR 105
- LCD monitor ratio of PC: 5%

PHILIPS

Related to Philips SmartManage and smart TCO LCD monitors:

- Deployment time saving: 25%
- Energy saving: 80%
- Reduced theft rate: 80%

7. Significant TCO saving with Philips monitors

As described earlier, awareness in user organizations of the importance of monitors in the Total Cost of Ownership picture is often limited. In many cases administrators cannot even be sure of the locations of their monitor assets, and these devices – despite their important cost contribution – are often treated more like 'consumable' accessories. As this white paper shows, Total Cost of Ownership is complex and involves many individual elements extending through all the life-cycle phases of an asset. It is much more than simply a question of low initial cost. The initial cost contribution of monitors may be relatively low, but like other assets with multiyear useful lives the initial investment is often relatively insignificant compared with all the other costs arising through the life cycle. This is why it is important to consider the total life-cycle costs when considering the purchase of new monitors.

Philips aims to address all cost-relevant factors in its LCD monitors, providing enterprise users with effective, process-based solutions to control and reduce their life-cycle costs on a structural basis. As calculated in section 6, Philips LCD monitors together with Philips SmartManage provides a saving of more than 12,5% on annual basis compared with industry average monitors. This saving is illustrated in figure 11. The latter also shows that the relatively modest initial investment required to purchase and deploy SmartManage is quickly recovered in practice.
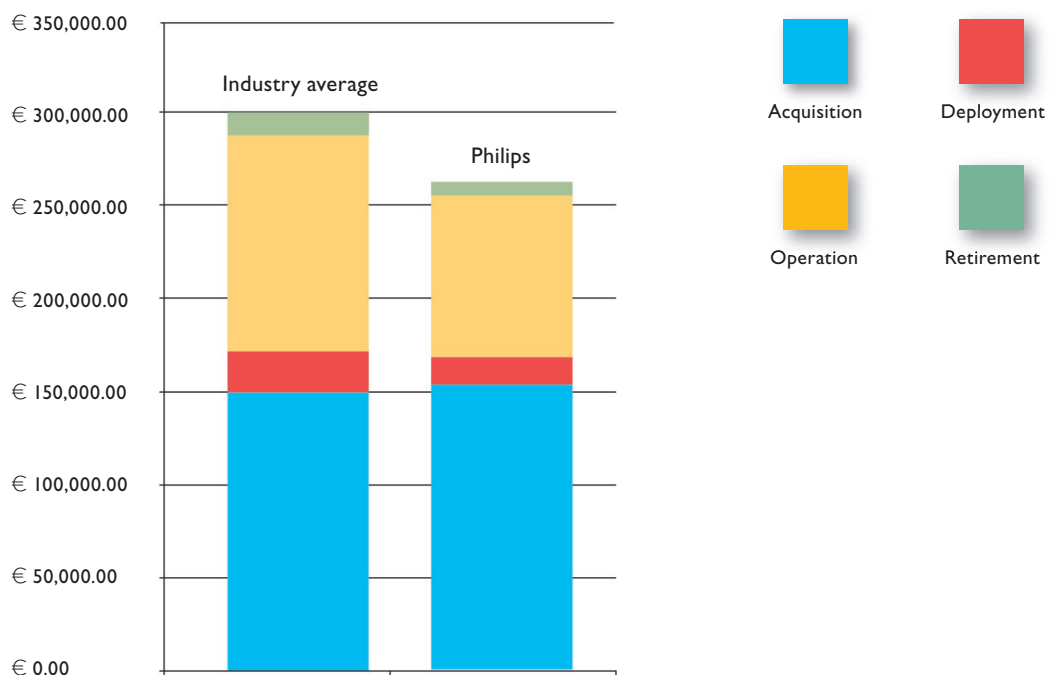

Figure 11: TCO cost savings with a Philips monitor solution

Philips is constantly working with suppliers, customers and regulatory authorities on a continuous improvement basis to ensure that its monitors provide optimum-cost solutions to the needs of both end-users and the enterprises in which they work.

PHILIPS

PHILIPS